

OBSERVATIONS ON THE DUGONG, *DUGONG DUGON* (MULLER),  
IN THE ANDAMAN AND NICOBAR ISLANDS, INDIA<sup>1</sup>

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(With two text-figures)

**Key words:** *Dugong dugon*, Andaman and Nicobar Islands, habitat protection.

The paper presents records of dugongs in the Andaman and Nicobar Islands. Morphological description of an adult female caught dead in a fishing net near Hut Bay in the Little Andamans is also given. It is concluded that the population of dugong in the islands, though not very high, is significant and can be conserved by protecting its potential feeding grounds.

INTRODUCTION

Situated between 6-14° N and 92-94° E, the Andaman and Nicobar Islands have large areas of seagrass, rich in diversity, which flourishes in clear, low-turbidity coastal waters. At least nine species of seagrasses belonging to six genera grow here (Das 1996). Fishes, turtles, crustaceans and echinoderms mainly use this habitat. Seagrass beds are also crucial for the highly endangered marine mammal, the dugong.

In the recent past, the urgent need to study the seagrass habitat and its associated animal life in Andaman and Nicobar Islands was felt by several workers (Silas and Fernando 1985, Rao 1990). Accordingly, a study was initiated by the Sálím Ali Centre for Ornithology and Natural History (SACON) to evaluate the habitat status, resource potential and conservation value of this ecosystem. The primary objective of the study was to identify the potential seagrass habitats for conservation, and information on dugong was also collected during the study.

Once widely distributed, the dugong *Dugong dugon* (Muller) has disappeared from many parts of its realm and is under serious threat

in most of the remaining areas. In India, dugongs occur in the Gulf of Kutch, Gulf of Mannar, Palk Bay and Andaman and Nicobar Islands. Seagrasses being the staple food, the dugong is intimately associated with the seagrass habitat. Information on dugongs in the Indian subcontinent is available for Gulf of Mannar, Palk Bay and Gulf of Kutch. However, there are not many records such as photographs or morphometric descriptions of dead or live dugong from the Andaman and Nicobar coast. A photograph of a dead dugong from Diglipur area was published by Rao (1990) and a diapositive of a dugong caught dead near Hut Bay during March 1989 is available at Zoological Survey of India (ZSI, Port Blair (P. T. Rajan, pers. comm.)). Besides, there are a few other reports (Bhaskar and Rao 1992, Rao 1990, James 1988, Jones 1980) which mention the presence of dugongs in the Bay Island.

METHODS

The survey was undertaken, with the help of local fishermen and divers, from morning to evening around the seagrass habitats of the selected localities (Figs. 1 and 2) during 1994 and 1995 (pre- and postmonsoon periods). The sites were sampled randomly by snorkelling and diving, since there is no established method to estimate dugong population size accurately in the wild, except by aerial survey. Interview

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Fig. 1: Map showing survey locations in the Andaman Islands

surveys were conducted to collect data on encounters and sightings of dugong in the coastal villages close to the survey area. As dugong poaching is illegal, the local fishermen were reluctant to share information. Hence, the interviews were done informally in several coastal villages covering various tribes, races and communities of the Andaman and Nicobar Is. The measurement of morphological features of a dead specimen at Hut Bay was done by one of the authors (Dey). Subsequently, we examined the complete skeleton.

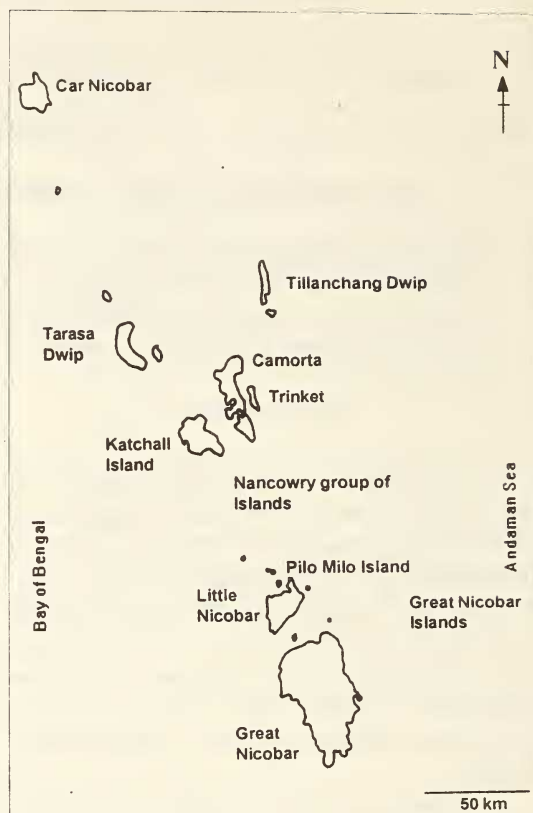


Fig. 2: Map showing survey locations in the Nicobar Islands

#### RESULTS AND DISCUSSION

Surveys by motor boat and rowing boat around Ritchie's Archipelago, North Reef, Marine National Park, Wandoor, and Diglipur during 1994 and 1997, and Little Andaman, Camorta, Pilo Milo, Little Nicobar and Great Nicobar Islands during 1995 and 1997 failed to locate dugongs in the wild. On several occasions, bones could be examined at Maya Bunder, Port Blair, Havelock, Hut Bay, Katchall and Camorta. The information gathered through interviews was very useful. Most of the tribes, namely the Andamanese, Onges and Nicobarese traditionally hunt dugong with iron harpoons tied to a boat (*dunghi*). Shompens have no knowledge of dugong hunting, hostile tribes (Sentinelese and

Jarawas) were not interviewed. Settlers, though they have no knowledge about hunting, at times get dugong in fishing nets close to seagrass beds. None of the tribes go for regular dugong hunting because of the time and effort it takes to catch one. The settlers from the mainland of India are mostly Hindus (Bengali and Hindi speaking) and do not like dugong meat as it looks and tastes like beef. Though there are no religious taboos preventing them from eating dugong meat, the settlers prefer fish. Hence killing is very often unintentional. To avoid legal problems, if an animal is caught dead in the fishing net, settlers/non tribals hand it over to the tribes who are exempted from the Wildlife (Protection) Act, 1972.

Moreover, around Ritchie's Archipelago, a group of five or six dugongs were seen by fishermen and divers on at least five separate occasions during 1990-1997 and six near Landfall island on regular basis. Thus, the number of dugongs living around the island groups are estimated to be around 40 (Table 1). However, a detailed study, preferably an aerial survey along the coast with expert help is essential to ascertain reliably the population size.

On February 19, 1997, a dugong was caught and brought dead to the shore at Hut Bay, Little Andamans. Since the net was laid 500 m offshore near the 11 km stop at 1700 h on February 18, 1997 and the animal was noticed dead in the net next morning at 0430 h, it must have got entangled and died any time during that period. Probably, the dugong had come to feed, as evidenced by the presence of surrounding seagrass patches and the stomach contents of the animal. When it was brought ashore, the Asst. Fisheries Development Officer (co-author of this paper) was informed. He reached the site immediately and prevented the fishermen from distributing the meat and bones. The dugong, an adult female (length: 2.63 m and weight: 250 kg), was buried under sand after recording morphometric details (Table 2). The complete skeleton was exhumed later and kept in the fisheries office at Hut Bay. The skeleton was examined in detail in May 1997.

Dugongs were common in the 1950s, but the population has dropped drastically in the recent past, as evidenced by sporadic sightings and rare records of poaching. The primary reason for this decrease in this island group is habitat loss, which has resulted from increasing heavy boat traffic, faulty land use practices such as conversion of forests to banana, areca nut and coconut plantations. Natural calamities like cyclones and high energy tidal storms may also be partly responsible. In fact, a wounded and dead dugong was noticed by Andaman Public Works Department workers near Pilo Kunji of the Great Nicobar Islands in July 1989 after a cyclone.

TABLE I  
INTERVIEW SURVEYS ON DUGONG SIGHTING  
BY FISHERMEN AND DIVERS DURING 1990 - 1995.

Localities	People/ Tribes	Number of Dugongs reported
<b>Andamans</b>		
Landfall	Settlers	6
Diglipur	Settlers	*
North Reef Is.	No habitation	*
Ritchie's Archipelago	No habitation	6
Little Andaman	Settlers	5
Dugong Creek	Onges	5!
Strait Is.	Andamanese	*
<b>Nicobar</b>		
Katchall	Nicobarese	5
Camorta	Nicobarese	10
Little Nicobar	Nicobarese	4
Great Nicobar	Nicobarese Shompens	4

- \* sporadic sightings reported, but numbers not confirmed.  
! As the distance between Hut Bay (Little Andamans) and Dugong creek is only 18 km in the sea, it is presumed that the same population of five animals cover both the areas.

The fishermen and regular divers had sightings of five dugongs on separate occasions between 1990 and 1994, along the north-western side of Camorta Island, five sightings near Dugong Creek and Hut Bay (five individuals), and four specimens each around Little Nicobar (Pilo Milo side) and Great Nicobar Islands.

TABLE 2  
MORPHOMETRIC DETAILS OF THE DUGONG  
CAUGHT DEAD IN A FISHING NET  
ON FEB. 19 1997 AT HUT BAY

Date of fishing	19.ii.1997 (Fishing net was laid at 5 pm on 18.ii.97 and the animal was found dead in the net on 19.ii.97 morning, fresh body)
Sex	Female (lactating)
Total length	2.63 m
Weight	250 kg
Perimeter at chest	1.8 m
Flipper size	42 cm x 53 cm
Snout to flipper	55 cm
Snout to eye	33 cm
Height of the body on ground	63 cm
Stomach content	semi-digested seagrass species.

This study concludes that dugongs are less abundant than in the recent past. Although their numbers are highly reduced and large populations are seen no more, dugongs still exist at least around Ritchie's Archipelago, North Reef, Little Andamans, Camorta (Allimpong, Trinket and Pilpilow), Little Nicobar and parts of the Great Nicobar Is. On the basis of the data

collected, we propose that the following measures should be taken for the conservation of dugongs in the Andaman and Nicobar Islands: (1) initiation of environment education programmes in the coastal villages, (2) protection of potential dugong habitats and enforcing strict legislation to protect dugongs in and around their feeding habitats by restricting human activities such as fishing and trafficking, and (3) regular monitoring of the dugong population. The study also advocates the necessity of an aerial survey of dugong populations to determine its current status, and to undertake long term monitoring thereafter.

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